Amendments to the Specifications

Please change page 8, line 7 to page 11, line 1, as follows:

A first aspect of the invention provides a method for selectively transferring onto a planar display substrate pixel control devices each controlling a plurality of pixels, comprising the steps of fixing onto a support substrate a substrate for pixel control devices each having a surface thereof provided with a plurality of integrated circuits, each of which controls a plurality of pixels, fixing onto a substrate for pickup the pixel control devices on the substrate for pixel control devices that have ~~has~~ been cut into individual ~~every one~~ integrated circuit, and causing the pixel control devices on the substrate for pickup to be chucked and retained onto a pickup device and transferring onto the planar display substrate the pixel control devices chucked and retained on the pickup device, wherein a plurality of pixel control devices are formed on the substrate for pixel control devices at a first direction array pitch px/m that is obtained by dividing an array pitch px in a first direction on the planar display substrate by a natural number m and at a second direction array pitch py/n ~~py~~ obtained by dividing an array pitch py in a second direction on the planar display substrate that is orthogonal to the first direction by a natural number n and wherein a number of the pixel control devices only corresponding to the array pitches px and py of the planar display substrate are selectively chucked and retained on the pickup device from the pixel control devices fixed onto the substrate for pickup and then transferred onto the planar display substrate.

A second aspect of the invention provides a method for selectively transferring onto a planar display substrate pixel control devices each controlling a plurality of pixels with an ~~a~~ integrated circuit, comprising the steps of fixing onto a support substrate a substrate for pixel control devices having a surface

thereof provided with a plurality of integrated circuits each controlling a plurality of pixels, fixing onto a substrate for pickup the pixel control devices on the substrate for pixel control devices that has been cut into individual ~~every one~~ integrated circuit and causing the pixel control devices on the substrate for pickup to be chucked and retained onto a pickup device and transferring onto the planar display substrate the pixel control devices chucked and retained on the pickup device, wherein a plurality of pixel control devices are formed on the substrate for pixel control devices at a first direction array pitch px/m that is obtained by dividing an array pitch px in a first direction on the planar display substrate by a natural number m and at a second direction array pitch py/n ~~py~~ obtained by dividing an array pitch py in a second direction on the planar display substrate that is orthogonal to the first direction by a natural number n, wherein the pickup device has vacuum chuckholes formed therein at an array pitch px in a direction corresponding to the first direction and an array pitch py in a direction corresponding to the second direction for chucking the pixel control devices, and wherein a number of the pixel control devices only corresponding to the array pitches px and py of the planar display substrate are selectively chucked and retained on the pickup device from the pixel control devices fixed onto the substrate for pickup and then transferred onto the planar display substrate. A third aspect of the invention provides a method for selectively transferring onto a planar display substrate pixel control devices each controlling a plurality of pixels with a integrated circuit, comprising the steps of fixing onto a support substrate a substrate for pixel control devices having a surface thereof provided with a plurality of integrated circuits each controlling a plurality of pixels, fixing onto a substrate for pickup the pixel control devices on the substrate for pixel control devices that has been cut into individual ~~every one~~ integrated

circuit, and causing the pixel control devices on the substrate for pickup to be chucked and retained onto a pickup device and transferring onto the planar display substrate the pixel control devices chucked and retained on the pickup device, wherein a plurality of pixel control devices are formed on the substrate for pixel control devices at a first direction array pitch px/m that is obtained by dividing an array pitch px in a first direction on the planar display substrate by a natural number m and at a second direction array pitch py/n ~~py~~ obtained by dividing an array pitch py in a second direction on the planar display substrate that is orthogonal to the first direction by a natural number n, wherein a mounting device comprising a pixel control device stage for disposing thereon the substrate for pickup and provided with a rotation angle adjustment mechanism, a substrate stage for disposing thereon the planar display substrate and provided with a rotation angle adjustment mechanism, a pickup device provided with a vacuum chuck that has vacuum chuckholes formed therein at an array pitch px in a direction corresponding to the first direction and an array pitch py in a direction corresponding to the second direction for chucking the pixel control devices and X-axis, Y-axis and Z-axis regulating mechanisms is used to selectively chuck and retain a number of the pixel control devices only corresponding to the array pitches px and py of the planar display substrate on the pickup device from the pixel control devices fixed onto the substrate for pickup and then transfer the chucked and retained pixel control devices onto the planar display substrate. In a fourth aspect of the invention having as a premise the method according to any one of the first to third aspects, each of the pixel control devices controls 3 colors x 4 pixels arrayed in 2 columns and 6 rows with an integrated circuit and transferred to a center of the pixels arrayed in 2 columns and 6 rows.

Please change page 11, line 16 to page 12, line 4, as follows:

A fifth aspect of the invention having as a premise the method according to any one of the first to third aspects provides a method for selectively transferring onto a planar display substrate pixel control devices each controlling a plurality of pixels with a integrated circuit, wherein the substrate for pixel control devices is attached to the support substrate, with the surface of the substrate for pixel control devices provided with the plurality of integrated circuits directed downward toward the support substrate, in the step of fixing onto the support substrate the substrate for pixel control devices having the surface thereof provided with the plurality of integrated circuits and, in the step of fixing onto the substrate for pickup the pixel control devices on the substrate for pixel control devices that has been cut into individual ~~every one~~ integrated circuit, the pixel control devices are transferred onto a surface of the substrate for pickup, with the substrate for pixel control devices upside down, and the substrate for pixel control devices is cut into individual ~~every one~~ integrated circuit after the surface of the substrate for pickup is directed upward.

Please change page 12, line 15 to page 13, line 2, as follows:

A sixth aspect of the invention having as a premise the method according to any one of the first to fourth aspects provides a method for selectively transferring onto a planar display substrate pixel control devices each controlling a plurality of pixels with a integrated circuit according to any one of the first ~~claims 1~~ to the third aspects ~~3~~, wherein the substrate for pixel control devices is attached to the support substrate, with the surface of the substrate for pixel control devices provided with the plurality of integrated circuits directed downward toward the support substrate, in the step of fixing onto the support substrate the substrate for pixel control devices having the surface thereof

provided with the plurality of integrated circuits and, in the step of fixing onto the substrate for pickup the pixel control devices on the substrate for pixel control devices that has been cut into individual ~~every one~~ integrated circuit, the pixel control devices are transferred onto a surface of the substrate for pickup, with the substrate for pixel control devices upside down, after the substrate for pixel control devices is cut into individual ~~every one~~ integrated circuit, with the surface thereof directed downward toward the support substrate.

Please change page 13, lines 9 to 16, as follows:

In any one of the first to six aspects of the invention, it is desirable that the adhesive force between the support substrate and the substrate for pixel control devices in the step of fixing onto the support substrate the substrate for pixel control devices having the plurality of integrated circuits formed thereon be different from the adhesive force between the substrate for pickup and the substrate for pixel control devices in the step of fixing onto the substrate for pickup the pixel control devices on the substrate for pixel control devices cut into individual ~~every one~~ integrated circuit.

Please change page 13, line 23 to page 14, line 2, as follows:

According to any one of the first to sixth aspects of the invention, it is desirable that the adhesive means between the support substrate and the substrate for pixel control devices in the step of fixing onto the support substrate the substrate for pixel control devices having the plurality of integrated circuits formed thereon be different from that between the substrate for pickup and the substrate for pixel control devices in the step of fixing onto the substrate for pickup the pixel control devices on

the substrate for pixel control devices cut into individual ~~every one~~ integrated circuit.

Please change page 22, lines 3 to 13, as follows:

A thirteenth aspect of the invention provides a planar display substrate according to any one of the ninth to twelfth aspects, onto which the pixel control devices are transferred by a method comprising the steps of fixing onto a support substrate a substrate for pixel control devices having a surface thereof provided with a plurality of integrated circuit each controlling a plurality of pixels, fixing onto a substrate for pickup the pixel control devices on the substrate for pixel control devices that has been cut into individual ~~every one~~ integrated circuit and transferring onto the planar display substrate the pixel control devices on the substrate for pickup that have been selectively chucked and retained on a pickup device. To be specific, it is desirable that the pixel control devices be transferred and produced in accordance with the transfer method for pixel control devices according to any one of the first to sixth aspects of the invention.

Please change page 28, lines 5 to 23, as follows:

As shown in Figure 3, a plurality of integrated circuits 3 as shown in Figure 1 are formed on ~~formed on~~ the silicon substrate 2 at regular intervals. The regular intervals (pitches) 5 and 6 correspond respectively to pitches 105 and 106 on the planar display substrate 100, as will be described later. When controlling 3 colors x 4 pixels with a single integrated circuit 3, the pixel control devices 1 are mounted as shown in Figure 4 on the planar display substrate 100 at the pitch 105 in the first direction X and at the pitch 106 in the second direction Y. As shown in Figure 5, the pitches 5 and 6 for integrated circuits 3 formed in plural numbers on the silicon substrate 2 are determined,

with the pitches 105 and 106 as the standards at which a natural number "m" of pixel control devices 1 and a natural number "n" of pixel control devices 1 are formed. To be specific, when representing the pitch 105 in the first direction X as px and the pitch 106 in the second direction Y as py on the planar display substrate 100, the pitch 5 in the first direction X and the pitch 6 in the second direction Y on the silicon substrate are represented by px/m and py/n, respectively, as shown in Figure 6. The front surface of the silicon substrate 2, i.e. the surface 2a on which the integrated circuits 3 are formed, is fixed onto the support substrate 7 using a first adhesive tape 8.

Please change page 29, line 23 to page 30, line 14, as follows:

In subsequent step R4, the silicon substrate 2 is cut <u>into individual</u> ~~every one~~ integrated circuit 3 into chips to produce pixel control devices 1. This cutting is attained by means of etching, sandblasting, laser beam machining, dicing, etc. From the standpoint of the production efficiency, sandblasting that performs cutting through high-pressure high-speed jetting of powders, such as alumina powders, from a nozzle is most advantageous. When it is intended to process the shape of the pixel control devices 1 with high precision, appropriate is laser beam machining that performs cutting utilizing laser light shift. While etching that uses plasma, so called dry etching, can be used for this cutting, since the processing speed thereof is later than that of other processes, the production efficiency is lower. Wet etching using a drug solution possibly deteriorates the processing precision of pixel control devices 1 owing to flow of the drug solution. Dicing performing mechanical cutting have a possibility of its die cutting blades flicking off the pixel control devices 1. Therefore, the dry etching, wet etching and dicing are inferior in yield. Thus,

the selection of the cutting processes is of importance. In the case of cutting the silicon substrate 2 to a thickness of around 20 to 100 μm as in the present embodiment, sandblasting or laser beam machining is appropriate. In this embodiment, an example of sand blasting will be described.

Please change page 50, line 9 to page 51, line 9, as follows:

In contrast, according to the first aspect ~~it is described in claim 1~~ of the present invention ~~that~~ "a plurality of pixel control devices are formed on the substrate for pixel control devices so that the array pitch may be px/m obtained by dividing the array pitch px of the pixel control devices in the first direction on the planar display substrate by a natural number m and the array pitch may be py/n obtained by dividing the array pitch py of the pixel control devices in the second direction on the planar display substrate, which direction is orthogonal to the first direction, by a natural number n, that the pickup device is formed therein with chuckholes for chucking the pixel control devices at the array pitch px in a direction corresponding to the first direction and at the array pitch py in a direction corresponding to the second direction, and that only the pixel control devices corresponding to the array pitches px and py on the planar display substrate are selectively chucked and retained with the pickup device and then transferred onto the planar display substrate". Thus, since the array pitches (px/m and py/n) of the pixel control devices on the substrate for pixel control devices and the array pitches (px and py) of the chuckholes of the pickup device are related to the array pitches (px and py) on the planar display substrate, a single operation of pickup enables a plurality of pixel control devices to be selected at the array pitches (px and py) on the planar display substrate and, with the array pitches maintained, to be transferred onto planar display substrate (Figure 36(b)). That is to say,

since the pixel control devices are selected every natural number m (at "m - 1" intervals) in the first direction X and every natural number n (at "n - 1" intervals) in the second direction Y, the pixel control devices 1 shown by the oblique lines in Figure 13 are selectively picked up. Therefore, the present invention can reduce the number of the pickup-and-transfer step and enhance the production efficiency as compared with Patent Document requiring the pickup-and-transfer step to be taken every one device-block 13 (pixel control device of the present invention).

Please change page 53, line 10 to page 54, line 6, as follows:

As described above, it is conceivable that the "device block 13" is an aggregation of four thin film transistor devices 12 controlling four pixels disposed around the aggregation, respectively. To be specific, the four pixels are disposed in two rows and two columns and the four thin film transistor devices 12 are disposed in a dense state at the center of the four pixels. This disposition is also adopted in Patent Document 2 (refer to Figure 5 thereof). That is to say, while the device block 13 of Patent Document 2 (corresponding to the pixel control device of the present invention) is an aggregation of a plurality of thin film transistor devices 12 each controlling one pixel, whereby a plurality of pixels are controlled with a plurality of thin film transistor devices, the pixel control device of the present invention control a plurality of pixels with a single integrated circuit. The two differs in this respect from each other. In the case of applying "the pixel control device that controls a plurality of pixels with a single integrated circuit" in the first aspect ~~appended claim 1~~ to the liquid crystal display according to one embodiment of the present invention, on the planar display substrate 100 facing the color filter substrate 111 with the liquid crystal 112 intervening between the two, a plurality of pixel

control devices each controlling a plurality of pixels (3 colors x 4 pixels, for example) with a single integrated circuit are disposed together with the wirings for the pixel control devices. Generally, the wiring portions in the display function as light-blocking portions. When intending to control a plurality of pixels with a single device corresponding to each of the pixels as in Patent Document 2, the wiring portions converge on the device and form light-blocking portions. On the other hand, in the present invention, the pixel control device and wiring for it enables saving of wiring and enhancement of the aperture ratio.

Amendments to the Drawings

Figs. 35(a), 36(a) and 38, filed on May 17, 2005, have been canceled. New replacement sheets including Figs. 35(a), 35(b), 36(a), 36(b), 37 and 38 have been submitted.